

Societal Complexity: policy making for changes

Interdisciplinary Master Class Methodology

Ten master classes, September 2017 – February 2018
Prof. Dr Dorien DeTombe & Dr Cor van Dijkum



Terrorism, climate change and refugees are daily news in quality newspapers. These complex societal problems concern us all.

How do we develop policy on these global problems? How do we change these problems? These problems can be handled more efficiently, transparently and better with the knowledge from the field of Methodology of Societal Complexity.

Expert courses for:

Scientists and Master students / Post Doctoral Students / PhD students in the fields of Methodology, Sociology, Public Policy Making, Healthcare and Agriculture, Policy Makers and Managers in the fields of Healthcare, Agriculture, Sustainable Development, Climate Change and Global Safety.

Master class

Goals

The Methodology of Societal Complexity Course and the Compram Methodology provide insights into how to deal with complex societal problems, the theoretical basis of the methodology of societal complexity, and how to act when confronted by such a problem. In the first four theoretical lectures you will have the opportunity to analyze one of your complex societal problems. In the second part of the course, consisting of six lectures, we approach a contemporary complex societal problem with the support of a simulation model to provide a deeper insight into the problem.

In the four theoretical lectures the founder of the field of Methodology of Societal Complexity, Prof. Dr Dorien DeTombe, introduces the Theory of Societal Complexity, and offers a way to analyze these problems. She will also provide methods through which policy makers can handle these problems to bring about sustainable changes. At this point you will learn about ways of handling your chosen complex societal problems. In the second part of the course there will be an opportunity to work together with simulation expert Dr Cor van Dijkum and Prof. Dr Dorien DeTombe to build a simulation model of a complex problem in order to see what the effects of certain policy changes might be.

Background to the course

Policy making about complex societal problems is difficult. For interdisciplinary problems a multi-disciplinary approach is necessary with experts from different fields, and with actors who are confronted with these problems that involve knowledge, power and emotions. The COMPRAM methodology (Complex Problem Handling Method, DeTombe, 1994; 2015) has been developed to handle these problems effectively by analyzing the many perspectives on the problem, developing policy regarding it, and evaluating the results. Guided by the facilitator, experts and actors analyze the problem, suggest changes and evaluate the results. This is performed with a combination of quantitative and qualitative methods.

Learning results

The course will inform you as a manager, a policymaker or a facilitator to better deal with complex societal problems. By participating in the course, you will receive an introduction in the Compram methodology and will understand the main aspects of it. You will learn to define a complex societal problem, and to realize why these problems should be handled by multi-disciplinary teams of experts, together with the actors involved with the problem. You will learn to appreciate the relationships of knowledge, power and emotions as aspects of the problem. At the same time you will learn to appreciate the role of simulation in considering and evaluating policy. After completing the course you should be better able to deal with complex societal problems in which your own company or organization is involved. In addition you should be able to share your new knowledge with your colleagues. For further information about the theory and methods see: http://www.complexitycourse.org/detombe_compram.html.

Certificate: After completing the course with satisfactory results, you will receive a certificate.

Methodology of Societal Complexity and the Compram Methodology

Complex societal problems are difficult to handle because there are several different factors which complicate them. The best approaches are multidisciplinary and interdisciplinary. A combination of qualitative and quantitative methods is needed to analyze these complex societal problems and make sustainable decisions. In the course the main ideas of the theory for handling complex societal problems will be explained with an introduction to the COMPRAM methodology (Complex Problem Handling Method, DeTombe, 1994; 2015).

Questions posed and discussed during the course are:

What are complex societal problems? What do different complex societal problems all have in common? Why do these problems require a multidisciplinary and interdisciplinary approach? Why must these problems be handled by groups of experts and actors? What are some of the basic approaches for handling complex societal problems? What are the roles of knowledge, power and emotion in handling complex societal problems? What combination of qualitative and quantitative methods is needed to handle these problems? What are the roles of system thinking, system-dynamics, and chaos theory in the development of the theory of complex societal problems?

The Compram methodology is a scientific methodology for handling complex societal problems in a transparent and structured way. Handling means analyzing, policymaking, decision making, guiding and evaluating interventions. The Compram methodology was developed by DeTombe (1994-2009). Most problem-handling methods focus only on a part of the problem; the Compram methodology, however, focuses on the whole spectrum of the problem handling process. The Compram methodology can be applied to all kinds of policy problems, such as climate change, transport, sustainable development, healthcare, economy, and global safety.

Computer simulation and research on the theory behind these types of problems is indispensable in handling complex societal problems. First of all because computer simulation can facilitate the understanding of causal relations among determining factors of a complex societal problems. Secondly because with computer simulation one can comprehend the time development of this causal network. But most of all, because complexity is a concept that can best be understood when it is put into the framework of mathematical complexity theory. That is a theory based on the mathematics of non-linear differential equations, which can be developed with the aid of computer simulation.

In this course the science and the art of computer simulation is introduced with modern user friendly software: STELLA. One does not need to be skilled in mathematics to use this software and practice computer simulation to understand complex societal problems. The advantage of this software is that it is based on the tradition of system dynamics. That is a modern holistic way to analyze social problems, viewing them in the context of social systems and using computer simulation. As a student of this course and as a STELLA user you will become familiar with theories and models that can be helpful in analyzing complex societal problems.

Course Outline

The course has a theoretical part consisting of four lectures of half a day and a more practical simulation part consisting of six lectures. The participants will have an active approach during the course including some preparation for each lecture, consisting of literature study and preparing one's own complex societal problem. Each lecture takes three hours.

Cases

You will get the opportunity to use the cases from your own experience.

Literature/software (included in the price of the course)

DeTombe, Dorien (2015) *Handling Societal Complexity. A Study of the Theory and the Methodology of Societal Complexity and the COMPRAM Methodology*. Heidelberg: Springer Verlag. ISBN /EAN 978-3-662-43916-6.

Van Dijkum, C. (2016) *Syllabus Simulation*.

Stella software, from Windows 7 or higher (also for MAC).

You can read about the Compram methodology on www.doriendetombe.nl

Final paper

The course will be completed with a paper on a complex societal problem by your own selection.

Program

The Master Class consists of ten lectures of three hours each.

Theoretical part: lecturer Prof. Dr Dorien DeTombe

- Tuesday
September 12 2017** **What is societal complexity?** Examples of terrorism, climate change and the credit crisis will be used to illustrate the concepts. You will then transfer this knowledge directly to your own complex societal problem.
- Tuesday
September 26 2017** **Knowledge development: Introduction to step 1 of the Compram methodology.** Application to your own problem.
- Tuesday
October 10 2017** **Complexity in large organizations: Use of a group decision room and the role of the facilitator.** Application to your own problem.
- Tuesday
October 31 2017** **Complexity of power and emotion.** Application to your own problem.

Practical part: lecturers Prof. Dr Dorien DeTombe and Dr Cor van Dijkum Please bring a laptop with Windows 7 or higher to use the software Stella.

- Tuesday
November 14 2016** **Case complexity:** discussion based on the Compram methodology of a contemporary problem and application to your own problem.
- Tuesday
November 28 2016** **Making a conceptual model of the case using the seven-layer model of the Compram methodology** and application to your own problem.
- Tuesday
December 12 2016** **Exercises with an easy to use software program** to make models of simple and less simple systems.
- Tuesday
January 02 2018** **Making the first step of a simulation model of a complex societal problem** and application to your own problem.
- Tuesday
January 16 2018** **Continued application to your own problem.**
- Tuesday
January 30 2018** **Completion of the simulation model** of your own complex societal problem.
Summary and course conclusion.
- Tuesday** **Receiving course certificate April 5 2017**

Course participants are limited to a maximum of 20.

The course runs over a period of five months, two meetings a month of lectures of half a day of 3 hours, total study time 4 days a month.

Course time: September 2017 - February 2018, certificate April 2018

Location: University of Amsterdam.

Lecturers



Prof. Dr Dorien DeTombe is the founder of the field Methodology for Societal Complexity. She developed the Compram methodology for political decision making on complex societal issues like sustainable development, floods, large city problems, terrorism, healthcare, credit crisis and water affairs. Dorien J. DeTombe studied social science and computer science and received her doctorate in the field of Methodology for Societal Complexity. She spent her main career at Utrecht University and at Delft University of Technology in the Netherlands and she is also a professor at Sichuan University, Chengdu, P.R. China. She is the author of [articles and books](#) on the subject of Methodology of Societal Complexity. She gives [lectures](#) on the subject of Methodology of Societal Complexity as Visiting Professor and she organizes yearly international [conferences](#). Dorien J. DeTombe is chair of the [International Society on Methodology of Societal Complexity](#) the [Operational Research Euro Working Group on Methodology of Societal Complexity Societal](#), the [West-Euro Working Group on Methodology of Societal Complexity](#), chair of the [Dutch Research Group \(Nosmo\) Complex Societal Problems & Issues](#). She is secretary of the [Nosmo Simulation Research Group](#). www.doriendetombe.nl



Dr. Cor van Dijkum obtained his MSc in Physics and in Andragology from the [University of Amsterdam](#) in the 1970s, and in 1988 his PhD in Social Sciences from the [Utrecht University](#) with the thesis entitled "Paradoxes: a methodological study to vicious circles of thought and action". He became researcher and lecturer in action research, methods of research, statistics, simulation & gaming, non linear modeling, among others in the Department of Andragology, Department of Methodology and Statistic at Utrecht University. He authored [articles and books](#) about these subjects. He chairs the [NOSMO](#) (Dutch Organization for Methodological Research in the Social Sciences). He organizes international conferences and workshops as a member of the board of Research Committee RC51 ([Research Committee on Sociocybernetics](#)) and RC33 (Research Committee on Logic and Methodology) of the ISA. In 2004 for example he organized an international conference on Methodology with over 700 participants in Amsterdam. In 2000 he founded [Sokrates Consultancy and Engineering](#) for consultancy on research and for master courses on statistics and computer simulation, e.g. for IBM, KPMG, Nolan and Norton and UWV (Employee Insurances Implementing Agency).
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Facts

Dates	12 and 26 September, 10 en 31 October, 14 and 28 November, 12 December 2017, 02 and 16 and 30 January 2018, certificate April 5 2018.
Day & Time	Tuesday afternoon from 3 - 6 pm. Attention: 02 and 16 November are on a Wednesday afternoon 3 - 6 pm.
Cost	€ 1695.00 per person.
	Includes:

* Dorien DeTombe (2015) *Handling Societal Complexity. A Study of the Theory and the Methodology Societal Complexity and the COMPRAM Methodology*, Berlin/Heidelberg: Springer Verlag. ISBN/EAN 978-3-662-43916-6; € 137,79.

* *Syllabus Simulation* by Cor van Dijkum.

* Stella Simulation software (for Windows 7 and higher).

Location University of Amsterdam, Roeterseilandcampus (REC), Nieuwe Achtergracht 166, 1018 WV, Amsterdam. Room REC-C2.04 and REC-C2.03

Organisation The organisation of this masterclass is provided by Greenhill & Waterfront International Scientific & Development Institute on Complex Societal problems, Sokrates Consultancy and Engineering, NOSMO: Dutch Society on Methodology, Operational Research Euro Working Group on Methodology of Societal Complexity, International Research Society on Methodology of Societal Complexity.

Subscribe:

Send email to: detombe@nosmo.nl

Pay four weeks before the start 'Masterclass Societal Complexity' and your name. You will only be registered after we have received your payment.

In case it is not possible for you to attend, you will get your money back until two weeks before the course starts. No refunds of tuition after that date; however, you may send another person as a substitute.



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